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X-ray beam (12), a shutter (13) for shaping the X-ray beam, and at the opposite end (10) of the arm, a recorder (11) for receiving the X-ray beam after it has passed through the dental arch for forming an image of the dental arch. The X-raying is performed with rotation of the arm (7) so as to image substantially the entire length of the dental arch. The shutter (13) narrows the X-ray beam (12) in the front area of the dental arch in order to increase the thickness of the sharply imaged layer compared to the two sides of the dental arch.--